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A FURTHER CONTRIBUTION
TO THE STUDY OF
MOLLUSCUM FIBROSUM;
ETIOLOGY; FIBROMATOUS
INFILTRATION AND ITS
RELATION TO KELOID

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SURGEON TO CHARITY HOSPITAL

(Reprinted from
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A FURTHER CONTRIBUTION TO THE STUDY OF MOLLUSCUM FIBROSUM; ETIOLOGY; FIBROMATOUS INFILTRATION AND ITS RELATION TO KELOID.¹

THE various forms of connective-tissue new growths of the skin, which include scleroderma, morphœa, xanthoma, molluscum fibrosum, and keloid, can to-day be quite clearly differentiated clinically. The pathological anatomy of these affections, however, is in a far less satisfactory condition, and much has yet to be learned before sharply drawn lines of the histological appearances of these affections can be laid down. This lack of pathological knowledge is felt mostly in the study of scleroderma and morphœa, and results in uncertainty of opinion as to whether they are really two distinct affections, whether they are simply varieties of one affection, or whether they are more or less remotely allied to one another. The truth is, that connective-tissue new growths so often differ from the type-form and so frequently merge the one into the other that it is almost impossible, from a pathological standpoint, to clearly and sharply differentiate them. This is particularly true as to the fibromata, in which group is included molluscum fibrosum and keloid, and which the investigations of Virchow, Billroth, Rindfleisch and von Recklinghausen show to be related to neuro-fibroma, elephantiasis mollis, lymphangio-fibroma and neuropathic papilloma (*nævus unius lateris*, v. *Bärensprung*). In my previous paper² I attempted a general clinical study of molluscum fibrosum; in this essay I shall present clinical evidence as to its occasional origin, when local-

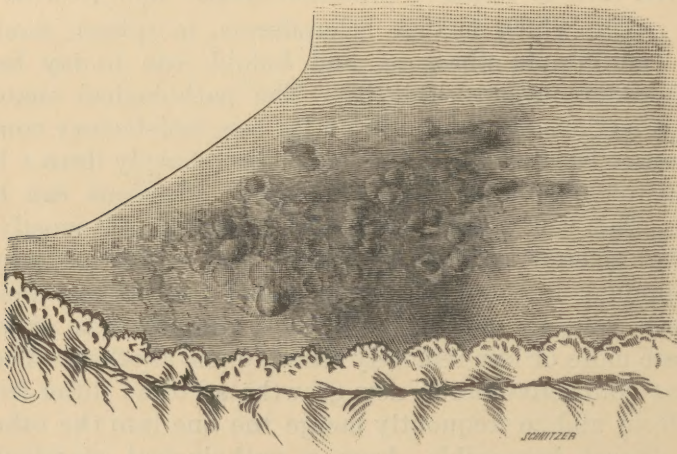
¹ Read before the Section on Surgery of the New York Academy of Medicine, February 14, 1887.

² "On the Mode of Development and Course of Molluscum Fibrosum and on the Question of its Relation to *Aerochordon*." *This JOURNAL*, February, 1887.

ized, in traumatism and also shall give prominence to the fact that, in addition to the typical molluscous growths, there is a clearly marked form of fibromatous infiltration of the skin itself, which in its histological elements resembles the more common affection. This fibromatous infiltration is little known in medical literature, has never before been clearly portrayed, and has been regarded as a rare form of keloid.

The basis of this essay are the two following cases, together with many collateral facts gleaned from a study of the various forms of connective-tissue new growths of the skin:

Ellen B., aged 47, English, married; was admitted to Charity Hospital September 22, 1886, for leucorrhœa and chest trouble.



Examination of the lungs shows dullness on percussion and emphysematous breathing and area of liver dullness less than normal—owing, perhaps, to indulgence in alcoholics. She is, withal, a fairly well-nourished woman. The history of her case is as follows: In 1859, during a brawl, she was bitten by her husband on the left shoulder, at the upper and outer border of the scapula. The wounds thus made were about an inch apart, the one nearly above the other. They bled slightly, but were not the seat of pain, then or at any time since. Very soon, perhaps in a month or two, a round tumor of the size of a pea appeared upon the site of the upper wound. This gradually grew larger and was followed by a similar tumor on the site of the lower

puncture. The woman is positive that these tumors corresponded exactly to the points of insertion of the teeth. They grew slowly and gradually, and reached, in about a year, the size of a white grape. Around and beyond these tumors the patient noticed that the skin became hard and firm, the process of extension being, according to her account, very slow. It was never accompanied by pain or any disturbance of sensation. About ten years ago, the patch reached the area it now occupies, and has since remained unchanged.

Her family history, as regards tumors and cancer, is negative. At the time of the bite, she was in good health, and so remained for years. Subsequently to the date of the bite-wounds, the parts were not injured nor subjected to any undue pressure, or indeed to any disturbing influence. The woman was positive that her husband's bite was the sole cause of the skin-manifestations, and was of the impression that her subsequent tumors were due to the malignancy of the bite of a very angry man, infuriated by drink. The woman was under my care years ago for vulvar chancroids. She had never suffered from syphilis. She made no mention of the present affection, which was discovered by my assistant, Dr. J. A. Bosch, while examining her chest. The following are the appearances as seen to-day, and shown in the woodcut, which is taken from a photograph:

Near the outer end of the spine of the scapula are two pedunculated tumors, possessing the features of molluscum fibrosum in its mature state. Around and beyond, towards the median line, and extending somewhat in the oblique line of the ribs, is a patch of morbid skin about two and one-half inches wide by four inches long. It presents a hard, firm-sensation to the touch, as if the skin proper was much thickened and condensed. Pinching of a fold shows that the infiltration does not extend deeply into the subcutaneous connective-tissue layer, since it yields to the grasp and does not present the hide-bound sensation found in scleroderma, but its consistence is quite as firm as that of keloid. Handling of tumors or morbid patch gives no pain. Its surface presents a ridged and rather uneven appearance, as if the infiltration into the skin destroyed its level plane, and threw it into a mass of slight undulations. The color is for the most part normal, but on the more prominent,

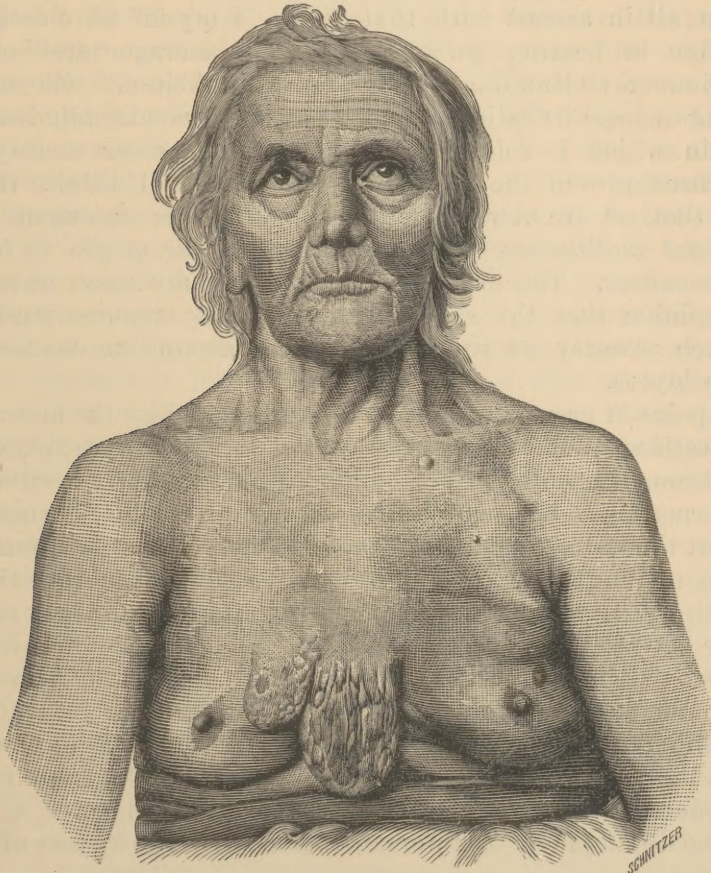
rounding, wavy elevations the normal hue of the skin of these points is increased to a slight pink. It is evident that this pink color is not abnormal pigmentation, but due to slight and mild stasis of the most superficial vessels, caused by compression of the infiltration. A portion of this morbid skin was excised by me and prepared for the microscope by my friend, Dr. G. L. Peabody, who found the whole derma infiltrated with fibrous tissue of the same character as that found in the older and firmer tumors of molluscum fibrosum. There was an excess of the fibres of connective tissue, which were not soft and oedematous as in young tumors, and there was a proportionately small quantity of cells. The papillæ and the glandular appendages of the skin were normal.

The microscope, therefore, fully confirmed the diagnosis I had made, namely, of tumors of molluscum fibrosum with peripheral infiltration of the adjacent territory of the skin with fibrous tissue.

Barbara M., German, aged 64, was until recently a patient in Charity Hospital. She presents a deformity of the chest-walls which resembles the pigeon-breast of rachitis and also ankylosis of the upper cervical vertebræ, from which sharp bony outgrowths jut backwards and produce pressure and tension upon the integument of the occiput. On the anterior chest-wall, between the breasts and just over the ensiform cartilage, is a pendulous tumor three inches wide at its base and about four inches long. This outgrowth looks precisely like a hairless scrotum, and presents to the touch the same soft sensation which that appendage does. When pinched, it gives much the sensation of an old and voluminous varicocele, due to the bundles of fibrous tissue contained in the tegumentary envelope. This feature is usually observed in dermatolytic flaps and large pendulous molluscous tumors. To the right of the base of this molluscum pendulum, and involving the upper and inner region of the corresponding breast, is a less extensive and less prominent sessile tumor which presents the same characteristics as the larger one. At the margin of the hair, just over the region of the atlas and axis, are two well-marked pedunculated molluscous tumors of the size of nutmegs. The woman, who by the way is not very intelligent, says that when six years old she was terribly beaten and trodden upon by her step-

father, and as a result she has the above-mentioned deformities and tumors.

The first point of interest presented by both of these cases is the origin of well-marked fibroma molluscum tumors in trau-



matism. In the first case, the two tumors are small and pedunculated, while in the second, in addition to two such tumors, we find one of the sessile and one of the pendulous variety. These two cases, therefore, present all the typical varieties of tumors of molluscum fibrosum. There is, perhaps, no subject in dermatology in a more unsatisfactory state than that of the etiology of molluscum fibrosum. While most authors are silent,

others state the cause as unknown. Others, again, speak vaguely of scrofula and heredity, of a dyscrasia, or of a diathesis as being the underlying cause. Hebra says that, in his experience, subjects to this form of growth are mentally and physically below par, to which Hardy replies that his opinion is not at all in accord with that view. I myself have seen the affection in healthy persons with fair average intelligence. Schwimmer ("Handbuch der Hautkrankheiten," Ziemssen) speaks of local irritation as the cause, and casually alludes to a case in which it followed a wound. The clear history of my cases proves the truth of this remark. I think, therefore, that we are now warranted in making the statement, that *localized molluscum fibrosum may have its origin in traumatic causes*. The evidence presented by my cases warrants the opinion that the wounds causing these tumors must be of such severity as to damage the subcutaneous connective-tissue layers.

A point of great clinical interest is presented by the first case. The teeth-wounds undoubtedly caused localized hyperplasia of the fibrous tissue deep down under the skin. This resulted in the formation of the two molluscous tumors. What is singular is, that the morbid process did not end there, but that from the region of the tumor proper a more superficial fibrous-tissue growth began which was seated in the middle and lower strata of the derma. There were, therefore, two forms of new growth, the one beginning subcutaneously and pushing through and above the skin, the other a well-marked infiltration into a considerable portion of the skin proper. Von Recklinghausen, in his admirable monograph, brings forth many facts to prove that there is an intimate relation between the nerves of a part and the development of fibromatous tumors.¹ The history of this

¹ Von Recklinghausen's monograph ("Ueber die Multiplen Fibrome der Haut und ihre Beziehung zu den Multiplen Neuomen," Berlin, 1882) is a notable contribution to the study of connective-tissue new growths of the skin, and is in direct line with Virchow's classical investigations. It is based mainly on a post-mortem case in which the author found the co-existence of fibroma and neuroma. The microscopic study, aided by the appliances of modern technique, is most thorough and exhaustive. Von Recklinghausen speaks with much complacency of his rare good luck in finding such a case, and evidently thinks that he is the first to call attention to the coincidence and relation of these two forms of new growth. In this, however, he is mistaken, since that was first done by my friend, Dr. I. E. Atkinson, of Baltimore, in an article entitled "Observations of two cases of Fibroma Molluscum," in the *New York Medical Journal*, December, 1875. Dr. Atkinson says: "In addition to the tumors of fibroma molluscum, there exists scattered over this man's body a

case seems to point to a nervous origin of the lesions. The question suggests itself, Did the teeth of the husband wound a nerve or nerve-filament and was this localized irritation the beginning of the hyperplasia which went on until more or less of the territory to which the nerve was distributed was invaded? The shape of the patch and the history of the growth would seem to point to this as the only solution of its origin.

The second point of interest in the first case is the fibromatous patch, which in its appearances is wholly unlike the classical connective-tissue new growths of the skin. A skilled observer would certainly never regard it as either scleroderma nor morphœa, much less consider it a form of xanthoma. From its history, course, situation, and appearance, it might be taken for a rare form of keloid. I think that, had I seen the patch without the accompanying well-marked tumors of molluscum fibrosum, I myself should have regarded it as an example of an anomalous form of keloid. I find that that eminent surgeon, Mr. Jonathan Hutchinson, has seen two cases similar to mine of fibromatous patches, but without the co-existence of the molluscum tumors, and has described them as a variety of keloid.

In his very interesting paper¹ "On the Conditions which Precede Keloid, and on Some Rare Forms of that Disease," he

second and distinct set of tumors entirely subcutaneous, generally about the size of a coffee bean, * * * and evidently false neuromata." Atkinson found upon microscopic examination the usual features of the fibroma, and of the histological appearances of the neuroma he says: "The neuroma was made up of a dense fibrous tissue, with a rather free distribution of spindle-cells. Its characteristics were those of ordinary fibroid tumors; no traces of nerve filaments could be made out; in fact, neither from the microscopic nor clinical appearances of the tumor could it be diagnosed as a false neuroma. This diagnosis was reached through the observation of other similar tumors, whose connection with nerves was unmistakable, but of which specimens could not be obtained, as there would have been necessitated an additional operation, to which the patient would not consent." Von Recklinghausen describes the appearances of the neuroma in his case as follows: "The neuromata show everywhere in the clearest possible manner the condition of soft fibroma, not the slightest new formation of nerve-fibres nor any fatty degeneration or disintegration of the same; but nerve-fibres in good condition can be followed easily through the thicker neuromata, only a few fibres being diminished in size, but even they containing myelin. On the other hand, an accumulation of connective tissue running in many bundles of the finest fibrous textures in the long diameter, with small and rather flat, somewhat oblong connective-tissue cells interwoven with a coarse network of blood-vessels." As a clinical groundwork, Von Recklinghausen, besides his own cases, gives quite full abstracts of cases found in the literature of fibroma and of the ordinary neuroma, but, singular to relate, of Atkinson's essay he says that, at the time of writing it was inaccessible to him.

¹ *Medical Times*, May 23, 1885.

reaches the conclusion that with keloid, as with other skin diseases, we must not expect too close a conformity to the type-form. He divides the affection into three forms, the first two being the classical varieties; first, that with much tendency to spread by claw-like processes; second, that in which there is little tendency to invasion of parts beyond the scar upon which it originated, and which sometimes shows a tendency to undergo involution. The third division is of most interest to us in this connection. Mr. Hutchinson thus speaks of it: "The keloid growth is deeper and never produces the glossy, superficial, elevated, spurred patches which occur in the others. These cases are very slow, show but little tendency to spontaneous disappearance. They do not develop in connection with large scars, but rather with inflammatory damage of the skin. They are less prone than the others to recur after excision." He further gives the details of two cases, which I will copy in brief.

A young woman (about 19) had a hard mass in the skin over her left breast, formed of two indurations, almost joining one another. The larger was of about an area of an inch. They were seated in the deeper portions of the skin, and projected a little above the surface and had abrupt margins. These were occasionally the seat of pain and itching. A year after excision, no return had been noted. They were composed of fibrous tissue.

Hutchinson's second case was that of a sea captain, upon the front of whose chest (the proper keloid region) to the left of the median line, was a patch three inches long by one and a half wide. The appearances were very different from those of common keloid, for *the growth was in the skin and did not rise about its surface* (italics are mine). The hardness was great, but ill-defined, and the patch was more lumpy and thicker in some parts than in others. When it involved the cutis, which it did in most parts, its surface was pale almost to whiteness, and although smooth, not glossy. The patch had been present more than twenty years and was increasing. It was excised, and by the microscope was found to be formed of a dense fibroid thickening of the corium. There had never been any itching or pain. Three years after extirpation, there was no indication of recurrence.

A study of these cases, supplemented by the facts of pathological anatomy, shows that, besides keloid, there is a rare form of connective-tissue infiltration of the skin which presents clearly-marked characters. It consists of a more or less diffuse patch of skin thickened in its entirety, and seemingly without involvement of the subcutaneous tissue. To the eye it is of normal hue or perhaps slightly pinkish, not as deep, however, in color or as glossy as keloid. The surface is ridged, undulating, as if the condensation of the skin had thrown it into a mass of slight waves.

At the periphery of the patch, which is of more recent origin, the tendency to slight elevation is greater than in its centre; in no place, however, is the salience peculiar to keloid to be observed. The patches are sharply margined and they grow chiefly in their longitudinal direction from the whole margin, and there is nothing to be observed in their increase akin to the claw-like processes of keloid. In point of slowness of growth these fibromatous patches resemble keloid; but they differ from that affection in never undergoing spontaneous involution, which is somewhat infrequently observed in keloid. While keloid is frequently the seat of pain and hyperæsthesia, these patches seem to be indolent and painless, though Mr. Hutchinson says that the patches upon the girl were occasionally the seat of pain and itching. In my case there was no disturbance of sensation. These fibromatous patches, like keloid, show no tendency to malignancy, nor do they, like morphœa and scleroderma, undergo contraction and throw the skin into ridges and folds. They seem to show a predilection to development in the regions most commonly the seat of keloid, the sternal and the supraclavicular. While in general keloid follows as a result of superficial wounds of the skin, such as scratches, burns and blisters, actual cautery and sunburn, and upon the scars of leech bites, small-pox, acne, herpes zoster (Jackson), syphilitic ulcers, etc., the fibromatous patches result from deep-seated injury to the skin and subcutaneous connective tissue. Finally, unlike keloid, which upon extirpation almost invariably returns in situ, the observations of Mr. Hutchinson show that in the fibromatous tumors there is no tendency to recurrence after removal. This fact is of great importance in prognosis.

My studies lead me to think that of all skin affections keloid is the one least likely to vary from the type-form. Confusion exists in the minds of many regarding it, for the reason that under the term keloid every form of hypertrophic cicatrix is included. While there may be a histological similarity between the two forms of new growth, clinically they are distinct. In my judgment, the term keloid should be limited, as Alibert intended it should be, to the peculiar pinkish elevated patches of new growth, from the margins of which claw-like processes jut out, presenting the semblance of a crab. In hypertrophic cicatrices, there is little or none of this tendency to claw-like outshoots, nor indeed to peripheral extension, though in color they may resemble more or less closely keloid. The division of this group which I think most rational and borne out by clinical observation is as follows: first, keloid in the limited sense indicated; second, hypertrophic cicatrices, and third, patches of fibromatous infiltration.

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